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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,901	04/06/2001	Helmut Jakusch	P20740	6402
7055	7590 07/30/2003		•	
GREENBLUM & BERNSTEIN, P.L.C.			EXAMINER	
1950 ROLAN RESTON, V	ND CLARKE PLACE A 20191		AHMED, SHEEBA	
			ART UNIT	PAPER NUMBER
		•	1773	
			DATE MAILED, 02/20/2002	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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		Application N .	1	Applicant(s)	
Office Action Summary		09/826,901	J	AKUSCH ET AL.	
		Examiner	-	Art Unit	
		Sheeba Ahmed		773	
Period fo	The MAILING DATE fthis communica or Reply	nti n appears on the cover	sheet with the cor	respondence address	
THE N - Exter after - If the - If NO - Failui - Any r	ORTENED STATUTORY PERIOD FOR MAILING DATE OF THIS COMMUNICA asions of time may be available under the provisions of SIX (6) MONTHS from the mailing date of this communiperiod for reply specified above is less than thirty (30) of period for reply is specified above, the maximum statute to reply within the set or extended period for reply will eply received by the Office later than three months after the patent term adjustment. See 37 CFR 1.704(b).	ATION. 37 CFR 1.136(a). In no event, howe ication. lays, a reply within the statutory min orry period will apply and will expire \$ 1, by statute, cause the application to	ver, may a reply be timely mum of thirty (30) days w SIX (6) MONTHS from the become ABANDONED (	r filed ill be considered timely. mailing date of this communicatio 35 U.S.C. § 133).	n.
1)🛛	Responsive to communication(s) filed	on <u>22 May 2003</u> .			
2a) <u></u>	This action is <b>FINAL</b> . 2b	)⊠ This action is non-fi	nal.		
3)□	Since this application is in condition for closed in accordance with the practice				is
·	on of Claims	-PP			
,	Claim(s) <u>1-21</u> is/are pending in the ap		d A!		
	4a) Of the above claim(s) <u>17 and 20</u> is/	are withdrawn from consi	deration.		
	Claim(s) is/are allowed.				
•	Claim(s) <u>1-16, 18, 19, and 21</u> is/are rej	ected.			
·	Claim(s) is/are objected to.				
•	Claim(s) are subject to restriction	n and/or election requirer	nent.		
	on Papers	Evaminar			
•	The specification is objected to by the E		d to by the Everni	nor	
الاال	The drawing(s) filed on is/are: a)  Applicant may not request that any object				
11)[] ]	The proposed drawing correction filed o				
' ' '	If approved, corrected drawings are requi			d by the Examiner.	
12) 🗆 🗆	The oath or declaration is objected to by		O11.		
•	inder 35 U.S.C. §§ 119 and 120	, 110 = 101			
_	Acknowledgment is made of a claim fo	r foreign priority under 35	115 C & 110(a)-(	d) or (f)	
•		i loreign priority under 55	0.3.0. § 119(a)-(	u) or (i).	
	All b) Some * c) None of:  A   Contified applies of the priority do	sumanta hava haan raasi	wad		
	<ul><li>1. Certified copies of the priority do</li><li>2. Certified copies of the priority do</li></ul>			No	
	<ol> <li>Copies of the certified copies of application from the Internati see the attached detailed Office action f</li> </ol>	onal Bureau (PCT Rule 1	7.2(a)).	in this National Stage	
14)∐ A	cknowledgment is made of a claim for	domestic priority under 35	U.S.C. § 119(e)	to a provisional applicat	ion).
	) ☐ The translation of the foreign languacknowledgment is made of a claim for				
Attachment	(s) /	·			
2) Notice 3) Inform	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO nation Disclosure Statement(s) (PTO-1449) Pape	-948) / 5)		TO-413) Paper No(s) ent Application (PTO-152)	
.S. Patent and Tr PTO-326 (Rev		Offic Action Summary	Pa	ort of Paper No. 7	

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#### **DETAILED ACTION**

#### Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-16, 18, 19, and 21, in Paper No. 7 is acknowledged. The traversal is on the grounds that there would not be a serious burden on the Examiner to examine the Applicant's application in total and that the differences pointed out in the restriction requirement do not appear to be material for examination. However, the Examiner disagrees with the Applicants arguments given that Inventions II and I are related as process of making and product made and the inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). As previously pointed out, the magnetic recording medium, in this case, could be made by a different process. For example, the magnetic recording medium could be made by a process wherein the dispersion of the isotropic magnetically soft pigment, binder and solvent could be applied to the substrate and the resulting moist layer could be oriented in a magnetic field before applying the subsequent dispersion of the magnetic pigment, binder and solvent.

Hence, this restriction requirement is maintained and made FINAL.

Claims 1-21 are pending of which 17 and 20 are withdrawn from consideration.

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## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1-3, 5-7, 12, 15, 18, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munch et al. (US 5,641,355) in view of Inoue et al. (US 5,989,703).

Munch et al. disclose a process for making a magnetic recording medium having a nonmagnetic substrate and at least one magnetic applied thereon (Column 1, lines 5-8). The process can be used to make a double-layer magnetic tape having two magnetic layers (Column 4, lines 60-68). Example 4 illustrates an arrangement having two magnetic layers. The lower layer comprises acicular chromium oxide having an H<sub>c</sub> of 37 kA/m, carbon black and a polyurethane binder and the upper layer comprise magnetizable metal powder having an H<sub>c</sub> of 133kA/m and a polyurethane binder. The upper layer has a thickness of 0.2 microns and the lower layer has a thickness of 1.5 microns (Column 5, lines 61-63).

Munch et al. do not teach that the lower layer comprises an isotropic magnetically soft pigment, which is selected from  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub>, Fe<sub>3</sub>O<sub>4</sub>, or a solid solution of these components, and has a mean crystallite size of less than 10 nm (or 6nm as recited in claim 5).

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However, Inoue et al. disclose a process to make γ-Fe<sub>2</sub>O<sub>3</sub> having a small crystallite size (i.e., less than 30 nm and hence overlapping with the instantly claimed range) and magnetism and use of such particles in a magnetic recording medium comprising a nonmagnetic substrate coated with a magnetic layer. The use of such an iron oxide magnetic powder allows the viscosity of the coating to be lowered, provides excellent coating characteristics, excellent surface characteristics and satisfactory electromagnetic conversion characteristics (Column 2, lines 1-6, 22-25, and 55-68).

Accordingly, it would have been obvious to one having ordinary skill in the art to replace the acicular chromium oxide in the lower layer of the magnetic recording medium taught by Munch et al. with a  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> having a small crystallite size (i.e., less than 30 nm) given that Inoue et al. specifically teach that use of such particles in the lower layer of a magnetic recording medium allows the viscosity of the magnetic coating to be lowered, provides excellent coating characteristics, excellent surface characteristics and satisfactory electromagnetic conversion characteristics (Column 2, lines 1-6, 22-25, and 55-68). With regards to the limitation that the lower layer has a coercive force of less than 0.7 KA/m (or 0.3 KA/m as recited in claim 7), the Examiner takes the position that such a limitation is met by the  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> containing lower layer taught by Munch and Inoue et al. given that the composition of the layer (i.e., a binder and  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> layer) and the structure of the layer (i.e., the type and amount of particles employed) is the same.

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3. Claims 4, 8-11, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munch et al. (US 5,641,355) in view of Inoue et al. (US 5,989,703) and Yamazaki et al. (US 5,714,275).

Munch et al. disclose a process for making a magnetic recording medium having a nonmagnetic substrate and at least one magnetic applied thereon (Column 1, lines 5-8). The process can be used to make a double-layer magnetic tape having two magnetic layers (Column 4, lines 60-68). Example 4 illustrates an arrangement having two magnetic layers. The lower layer comprises acicular chromium oxide having an H<sub>c</sub> of 37 kA/m, carbon black and a polyurethane binder and the upper layer comprise magnetizable metal powder having an H<sub>c</sub> of 133kA/m and a polyurethane binder. The upper layer has a thickness of 0.2 microns and the lower layer has a thickness of 1.5 microns (Column 5, lines 61-63). On the other hand, Inoue et al. disclose a process to make γ-Fe<sub>2</sub>O<sub>3</sub> having a small crystallite size (i.e., less than 30 nm and hence overlapping with the instantly claimed range) and magnetism and use of such particles in a magnetic recording medium comprising a nonmagnetic substrate coated with a magnetic layer. The use of such an iron oxide magnetic powder allows the viscosity of the magnetic coating to be lowered, provides excellent coating characteristics, excellent surface characteristics and satisfactory electromagnetic conversion characteristics (Column 2, lines 1-6, 22-25, and 55-68).

Munch et al. and Inoue et al. do not teach that the magnetic pigment in the upper layer is a ferrite pigment, that the weight % of the magnetically soft pigment in the lower layer is within the range recited in claims 8 and 9 of the instant application, that the  $\gamma$ -

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 $Fe_2O_3$  in the lower layer has been surface treated with an aluminum or silicon compound, that the nonmagnetic pigment in the lower layer meets the limitations recited in claim 13 and is a mixture of carbon black and  $\alpha$ - $Fe_2O_3$ .

Yamazaki et al. disclose a magnetic recording medium comprising a magnetic layer, a lower layer and an upper magnetic layer and shows excellent electromagnetic characteristics. The upper layer comprises ferrite particles (Column 3, lines 1-25) and the lower layer comprises  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> which may be treated with a surface treating agent (Column 6, lines 10-22). The lower layer further comprises inorganic compounds such as  $\alpha$ -iron oxide and the particle size of theses particles is 0..05 to 2 microns and the particle shape may be acicular, spherical, polyhedral, or hexagonal. The surfaces of the particles are treated with aluminum or silicone oxide and such a treatment results in a homogenous and dense surface layer (Column 7, lines 1-64). Carbon black may also be incorporated into the lower layer and is known to reduce the Rs effect.

Accordingly, it would have been obvious to one having ordinary skill in the art modify the magnetic recording medium taught by Munch et al. and Inoue et al. by using a ferrite magnetic pigment in the upper layer, by surface treating the  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> in the lower layer with an aluminum or silicon compound, and by using a mixture of carbon black and  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> in the lower layer given that Yamazaki et al. specifically teach that the use of ferrite particle provides excellent electromagnetic characteristics, and surface treatment with an aluminum or silicone oxide results in a homogenous and dense surface layer and that the addition of carbon black is known to reduce the Rs effect. Furthermore, it would have been obvious to one having ordinary skill in the art to

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optimize the weight percentage of the magnetically soft pigment in the lower layer given that it is known that the amount of magnetization of a layer can be controlled by controlling the amount of magnetically soft pigment present in the layer.

### Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mon-Fri 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.

Shuba Hune S Sheeba Ahmed Art unit 1773

July 26, 2003